FROM THE

DEPARTMENT OF AGRICULTURE, LABOR AND INDUSTRY

STATE OF MONTANA

HELENA

1924 Report.

December 1,1924.

To the Governor:

This report on the operations of the Department of Agriculture of the State of Montana, covers in a general way the period from July 1,1923 to November 30,1924.

PART 1 - DEPARTMENTAL ORGANIZATION

The work of the Department of Agriculture falls into six main divisions: (1) That which is handled directly by the Commissioner of Agriculture, (2) Grain Standards and Marketing, (3) Horticulture, (4) Dairying, (5) Labor and Publicity and (6) Montana State Fair.

The division of duties between the Department of Agriculture and the Montana State College is distinct. The work of the Department is almost wholly regulatory, concerned with law enforcement and duties under the state's police power aimed at public protection. The work of the Agricultural College has wholly to do with research, education and educational extension. There is no unnecessary duplication of work.

Exclusive of the Montana State Fair, the appropriation from the state general fund for the work of the Department of Agriculture was $38,259.00 for each year of the biennium closing June 30,1925. In addition to this sum, the Department of Agriculture has the use of the fees and earnings of the several divisions, which in the fiscal year ending June 30,1924 amounted to $34,703.53, making a total of $72,962.53 available for the fiscal year last closed.

The Grain Division in its several important functions, is entirely

self-supporting from its earnings, and imposes no cost upon the state general fund. The Horticulure Division normally is about 40 per cent self-supporting. New sources of income provided for the Dairy Division by the Eighteenth Legislative Assembly, make that Division approximately 30 per cent self-supporting. The Division of Labor and Publicity, which is in charge of the state land settlement program and the issuance of state publications, is entirely dependent on the general fund, since it has no source of income. So also is the Commissioner's office, and the work with poultry husbandry and apiculture. I wish respectfully to call to your attention the fact that less than 15 per cent of the total expenditures of the Department of Agriculture are for the maintenance of the office of Commissioner of Agriculture and the lines of work which he administers directly. The overwhelming part of the work and expense is in the discharge of duties which all state governments have found it necessary to undertake. It is with the intent to make this clear that I am going into some details in describing the organization and the functions of the Department of Agriculture as a preliminary to the report of the work done during the past two years.

A. DIVISIONS and DUTIES.

1. Commissioner's Office. The work of the Commissioner of Agriculture is largely directed toward the supervision of the departmental divisions and the administration of general work in the Department that does not naturally fall into any one of the several divisions. Examples of this type of work are the direction of the state alfalfa seed certifications, which is proving to be a valuable aid in extending the market for Montana grown alfalfa seed in other states; the administration of the small fund

allotted to poultry husbandry; and that designed to prevent the spread of bee diseases in the state. It has been found important for the Commissioner of Agriculture to represent the state's interests in relation to the national agricultural program, since it is apparent that many of the difficulties in which Montana farmers have found themselves have been due to national and world wide causes, rather than to causes peculiar to Montana.

2. Grain Standards and Marketing. This division, which is entirely self-supporting from the license fees which it collects, and from the earnings of the grain grading and scale testing branches, has charge of licensing and bonding all grain elevators, warehouses, dealers and track buyers, and looks after the public interest in all phases of grain marketing. It is constantly handling collections on bonds and assets in cases of insolvency or fraud. This Division also has the responsibility of administering the grain grades in this state. In this connection, it has maintained since 1920 a grain grading laboratory at Great Falls which is constantly increasing in public use and value, and to which was added during the last season the equipment and personnel for protein determination of wheat samples. This is a highly important feature of Montana's grain marketing. A new station is being started in a modest way at Billings, which will be developed as the farmers of south central and eastern Montana learn of its availability.

Another important function of this Division is the inspection and correction of all the scales in the state over which grain is weighed for the public. This has been developed by a man with a life experience as a scale builder and expert, and its aim has been to expand in service all the money collected as fees for scale examinations.

3. Horticulture. In a sense, this title is misleading, since the work of this Division is not confined to horticulture. One of its most important functions is the enforcement of the quarantine laws and regulations, upon which the freedom of Montana crops from serious pests and diseases to a considerable extent depends. This Division enforces the alfalfa weevil quarantine, those intended to check the spread into the state of the black stem rust of wheat, and the white pine blister rust; the potato eel and tuber moth; the numerous fruit insect pests and diseases.

By cooperative agreement between this Department and the U.S. Department of Agriculture, a service of shipping point inspection administered by the Horticulture Division has been made available to the commercial producers of apples and potatoes, which is of great importance in marketing to advantage in distant cities. The fees collected for this work and other functions of this Division, render it about 40 per cent self-supporting. Within the last two years the personnel of this Division has been cut to a minimum, below which it is not safe to go if the state is to attempt to enforce quarantines, and to fight the spread of insect pests and plant diseases. Headquarters of this Division are maintained at Missoula since much of the work in direct connection with horticulture is in the western part of the state. This arrangement reduces costs through the saving of mileage.

4. Dairying. This Division has charge of the licensing and supervision of the creameries and cream stations. It has had signal success, with the cooperation of the dairy interests, in raising the standard of cleanliness and sanitation of those agencies which handle the farmer's

cream on its way to market as a finished product. This Division licenses and supervises users of the Babcock test to secure honest and accurate tests, and enforces the laws on butter weights, contents and labels.

5. Labor and Publicity. For convenience, the administration of the state labor laws and functions that are outside the jurisdiction of the Industrial Accident Board, are lodged in this Division. The labor duties includes the administration of the child labor law and laws relating to hours of labor, the direction of municipal free employment offices in the State, and the handling of harvest and emergency labor. To add to the efficiency of the labor work, an agreement was entered into two years ago whereby the Chief of this Division is named Federal Labor Director for Montana, and a part of the expenses of this office are met by the U.S.Employment Service.

This Division handles all the correspondence relating to land settlement and resources of Montana, agricultural and other statistics. It issues the state publications dealing with these subjects.

The big work which the Department of Agriculture has been shaping its plans to handle, centers about a constructive land settlement program for this state, which should be administered through this Division. Montana has millions of acres of unused farm lands. The big farm mortgage companies have recently acquired title to vast tracts of lands in this state which they are interested in colonizing. It is the state's responsibility to develop a program which helps secure the best of prospective settlers, and to locate them properly under terms and conditions that enhance the prospect of permanent success. The work which is going forward in this Division along this line is significant and far-reaching, and the increase in the budget requested for this year is aimed almost wholly to finance the

necessary expansion in this line of state activity.

6. Montana State Fair. The administration of the State Fair during the last two years has been on a budget of gross expense sharply reduced below the average for the ten years preceding. The State Fair is managed by the Department of Agriculture with the assistance of a non-salaried Advisory Board representing different communities and interests. The total appropriation for each year of the present biennium was $51,000.00. It was not possible to put on the Fair at quite so low a figure without a reduction in the amount of premiums offered. Neither the Department of Agriculture nor the State Fair Advisory Board cared to assume the responsibility of reducing the premiums below the standards that have been set by experience and by the practice of other state fairs, comparable to that institution in Montana.

B. BUDGET - ACTUAL and REQUESTED.

The budget for the present biennium under which the Department of Agriculture has operated, allows $38,259.00 out of the general fund, together with the fees and earnings. The request of the Department of Agriculture is that the appropriation from the general fund be increased to approximately $45,000.00 in order to finance the work in land settlement, state publications, etc., which I believe the present and confronting situation in Montana not only justifies but actually requires.

The estimates of expenditures for the remainder of the work of the Department of Agriculture for the next biennium stands practically at the figures in the budget for the current biennium. It is pointed out that the program for safe and orderly land settlement in this state means

the introduction of new taxpayers and new revenues for state and municipal ities just as soon as additional men and women get themselves established on a permanent and profitable basie on the land. This Department has worked out this program, which has been presented to and approved by all the public and semi-public agencies in the state that are interested in land settlement. It awaits the approval of the Legislature and the necessary financial eupport to go ahead with ite realization and practice.

PART 11 - REPORT BY DIVISIONS

COMMISSIONER'S OFFICE

Much of the work of the Commissioner of Agriculture is in relation to the several divisions of the department, although functions that do not naturally belong in any of the divisions are attended to directly by the Commissioner.

During the last two years there has been developed a system of alfalfa seed certification whereby the State by supervising the loading, shipment, and sealing at terminals in packages for final sale of Montana grown alfalfa seed has been able to assist the growers materially in establishing a preferred market throughout the middle western states. This is handled directly by the Commissioner's office. Cooperative agreements have been entered into with the states of Michigan, Illinois, Wisconsin, Minnesota and Nebraska whereby agents of those states act for the Montana department in performing the sealing service upon the arrival of seed in the markete within those states. This is a line of work which will be expanded considerably in the future and can be made to cover seed other than alfalfa. There is a pronounced demand for Montana grown seed over most of

the country and the buyers like to have the identity of their seed guaranteed by the State so that they may know they are receiving what they are paying for.

In the belief that the State of Montana must now establish a definite program in relation to land settlement this office in the spring of 1924 held a Land Settlement Congress in which representatives of all the public and semi-public agencies in the State that are concerned with the land problem were represented. The results were the formulation of a definite policy for the State to follow in relation to land settlement; the decision to center state activities along this line with the State Department of Agriculture; and the start toward a state-wide system intended to surround prospective settlers and home-seekers with all the helpful contacts that are available in the State. This is one of the most important lines of work that confronts the State at the present time, and in the future neither thought, effort nor expense should be spared by the State in the development of a sound policy that tends toward the proper development of the State and at the same time avoids the evils of exploitation and misrepresentation. This subject is treated more fully in the report of the Division of Labor and Publicity.

In response to the demand of the farm organizations of the State, seconded by many of the business and commercial groups, the Commissioner of Agriculture spent considerable time and effort during the last year working with representatives of agriculture from other farming states upon a national program intended to secure equality under the law for the industry of farming. Except for the time involved this work was not done at the expense of the State but of national farm organizations and of farm and business

groups in Montana. Much of the slowness in recovery of a favorable economic position by the farmers of this State has been due to national and world-wide causes, rather than to causes that are peculiar to Montana farming conditions. This department has endeavored to do what might be done to represent this state in the attempt to work out fair solutions for these national problems.

The administration of the duties in connection with poultry husbandry and apiculture, which are treated later in the report, has centered in the office of the Commissioner.

DIVISION OF GRAIN STANDARDS AND MARKETING

John M.Davis,Chief
Mrs.H.A.Morris,Clerk
George H.Berry,Grain Scale Expert
*Lloyd Graham,Grain Scale Inspector
*H.A.Kain, " " "
George H.Moran,State Grain Inspector,Great Falls
James Aitken,Deputy " " " "
*Martin Lundquist," " " " Billings
*R.E.Bancroft, " " " " "

(* part time only)

The Division of Grain Standards and Marketing aims to see that every grain elevator and warehouse, and every person merchandising in grain in Montana is licensed by the State and has filed with the State a good surety bond to protect the public interest. This report treats with the grain division in two periods - December 1,1922 to November 30,1923; and December 1,1923 to November 30,1924.

The records of the Grain Division show that every grain elevator operating during the season 1922-1923 was under license and bond. Licenses included five hundred and ninety-one public warehousemen, eighteen grain

dealers, eighteen track buyers, and seven brokers. The department has followed out the policy of accepting nothing but surety bonds, although in the case of certain applicants that are unable to secure surety bonds escrow deposits of cash in an amount fixed by the Department of Agriculture has been accepted.

For the season 1923-1924 licenses were issued to five hundred and seventy-six public warehousemen, nine grain dealers, seven track buyers, and eight brokers.

It has not been easy to secure bonds covering all those cases because surety companies have been very careful about the business written by them. Compared with the total number of bonds, however, the losses on grain elevator guarantees have been few. Every precaution is taken to safeguard the interests of the public in grain merchandising; commencing at the start of the grain marketing season semi-monthly reports are regularly required showing the condition of each elevator, and more frequent reports in special cases.

In 1923 the regulation storage ticket was changed to conform to the new grain law passed by the 18th Legislative Assembly, and all elevators during this season were checked to ascertain whether or not they were using this regulation storage ticket. Just one instance arose where this order had been disregarded.

An interesting and one of the most important additions to the work of this department during the past two years has been the installation of protein testing equipment at the Great Falls laboratory. Since the grain purchases have rapidly drifted toward a protein basis, this is a very important work and has increased remarkably as shown by the report of that office.

In September of this year a grain inspection laboratory was established at Billings,Montana, in connection with other inspection work of the Department of Agriculture. Recently equipment has been installed and a Federal licensed inspector placed in charge.

When considered with the number of elevators and the extent of their operations, there have been comparatively few failures during the period covered by this report.

On December 16,1922, the Moore Farmers' Elevator Company of Moore, Montana, failed. Representatives of the department took charge of the grain on hand, and through the office of the Attorney General, commenced action on the bond. Total claims against the company for stored grain amount to $23,922.43. From the grain on hand $13,392.47 was realized and a fifty per cent payment to claimants made. The bond is for $10,000 and the suit for its collection comes to trial in Lewis and Clark County in January.

On January 25,1923, the Roy Farmers Elevator at Roy,Montana, closed and its manager left the state. Claims for stored grain amounting to $8,663.91 were paid in full by the bonding company under the $10,000 bond that had been given.

Settlement has been secured upon storage claims for grain lost in the fire that destroyed the Farmers' Cooperative Elevator at Comertown on April 1,1923.

The failure of the Gallatin County Union,Bozeman, in January , 1924, is now in process of settlement through a committee appointed by the creditors, as according to a ruling from the Attorney General's office, the department had no supervision over this matter.

Inability to meet storage obligations on the part of B.F.Berry of Kalispell,probably will result in a call being made on his bond for the protection of owners who stored grain with him during the season of 1924.

The department has handled many minor disputes between farmers and elevators the past two years dealing with differences in grades of grain, amounts, discrimination in price, etc., and a full history of these disputes is on record in the office.

A complete study relative to the amount of grain actually lost in transit was made by the department, taking two representative months of the year, September and December,1923. This study included 46 elevators which were fairly well distributed over the state, touching each section of the east as well as the west side, and covered 1039 car shipments. Line houses, independent and cooperatives were included as were shipments of the Montana Wheat Growers Association. Shipments made by independent houses showed an average of .0097%; line houses showed a loss of .0053%; cooperative houses a loss of .0016% while shipments made by the Wheat Growers Association showed a loss of .0004%. Not all houses had a complete report as a few had not received settlement on claims filed with the railroads, and the above figures are based only on returns received.

Statement of Licenses

GRAIN DIVISION Dec.1,1922 to Dec.1,1923.

Total receipts from license fees to November 30,1923 ----$9,465.00

Licenses issued to public warehousemen	591	
" " " grain dealers	18	
" " " track buyers	18	
" " " brokers	7	
	634	
License transfers ----------	3	
	631 at $15 each	$9,465.00

GRAIN DIVISION Dec.1,1923 to Nov.30,1924.

Total receipts from license fees to November 30,1924 ----$9,045.00

Licenses issued to public warehousemen	578	
" " " grain dealers	9	
" " " track buyers	7	
" " " brokers	8	
Licenses issued last season not included in report of Nov.30,1923	3	
	603 at $15 each	$9,045.00

Grain Scale Testing (Geo.H.Berry in charge)

Attention is called to the growth of the work accomplished during the period covered in this report - December 1,1922 to November 30,1924.

Prior to and during each grain moving season every scale over which grain is weighed for the public in Montana is inspected and corrected by the scale experts. In addition to the head of this work, who spends his entire time while roads are open for travel, in the field working on the scales, two men, who have had several years' experience in this work, are employed during the summer and fall months. This branch of work is entirely

self-supporting, and the aim is to expend all the money collected back in the service to make it just as valuable as possible.

In 1923 there were tested 222 wagon scales as against 321 in 1924. The 1924 season also showed an increase in the number of wagon condemned scales. The department took in a larger territory this season in its inspection work, testing many scales outside of the elevators, belonging to counties, cities, lumber and coal companies and many farmers' scales, some of them coming under the law as they weighed grain, and others inspected by request. Ninety-five per cent of the condemnations were of these outside scales. The elevator scales this year were found in good condition owing to the thorough work during the season 1923, and but few were condemned or needed adjusting. The outside scales weighing grain were mostly condemned on account of faulty construction.

The report for 1924 shows a big increase over that of 1923 in reinspections. Operations were started earlier in 1924 and the general work completed in time to allow the scale inspectors to cover their territory again and make reinspection. Many side trips were made in addition and this resulted in a heavier expense for traveling than in 1923 as the reinspection work carries no charge.

One hundred seventy five wagon scales were tagged during 1924 to forbid their use in weighing grain. In tagging those scales it requires nearly as much time to do the work as if the test were made, and no compensation is received. But it is a safeguard to the public as many of the scales tagged in this manner were unfit for use and would cause loss to the farmer who weighed his grain over them.

There is also an increasa in the number of railroad track scalas inspacted over that of last season. The fee for each scale is $10.00 and this does not nearly cover the cost of this work. The scales are scattered over the entire state, and the cost to the inspectors for railroad fare and expenses is very heavy. So far the work in this line of scales has not developed to any extent, the scales of the Great Northern Railway Company being the only ones covered,but another season it should be carried on more extensively.

The trouble over weights in the sugar beet territory has been largely corrected by the scale testing department. Many complaints have come from that district regarding the weighing of beets over the Great Western Sugar Beet Company's scales. It was learned that this company and also the Holly Sugar Company were loaning their scales to the farmers for weighing grain as well as beets. At first the company was hesitant to accept state inspection as it employed scale men to take care of the work, but after state men had supervised the rebuilding of two scales, the company began to show interest and arrangements were made for the department to take charge of the inspections. Arrangements were also made with the Holly Sugar Company to do their work. Approximately 100 scales were tested for the two companies and weighmans' licenses were issued covering all scales. This procedure gave the farmers more confidance in weights and eliminated controversies with the sugar beat companies. Not one complaint has come to the Department of Agriculture this season since the scale work has been completed.

STATEMENT OF SCALE WORK BEGINNING
DECEMBER 1,1922, AND ENDING DECEMBER 1,1923.

Number of wagon scales tested	222
" " hopper " "	448
" " automatic "	166
" " platform "	242
" " dump " "	639
" " grain testers "	630
" " flax " "	560
Other kinds of scales "	88
Number of track scales "	5
Total number of scales tested	2998

Number of scales adjusted	412
" " " rejected	155
" " " reinspected	83
Scales tested under new law	200
Scales not inspected, but tagged forbidding the weighing of grain	75

STATEMENT OF SCALE WORK BEGINNING
DECEMBER 1,1923, AND ENDING DECEMBER 1,1924.

Number of wagon scales tested	321
" " hopper " "	441
" " automatic "	141
" " platform "	198
" " dump " "	610
" " grain testers "	587
" " flex " "	557
" " dormant " "	38
" " flour scales "	19
" " railroad track scales tested	10
	2922

Number of scales adjusted	582
" " " rejected	160
" " " reinspected	144
Scales tested under new law	321
Scales not inspected, but tagged forbidding the weighing of grain	175

Grain Grades and Inspection (George H.Moran,Chief Inspector)

Since August,1920, 16,474 samples have been tested for grade to date; 12,817 of these were samples taken from carloads at Great Falls,and 3,657 were samples received by mail from farmers and elevators throughout the state. About 95 per cent of these samples were wheat and a bout five per cent of all other grain evenly distributed as to number of corn, oats, rye, barley and flax.

The quality of the wheat tested has on the whole been very high, especially for the three years 1920,1921 and 1922. The 1923 crop suffered in quality from excessive moisture throughout the growing season and more so during the season of harvest. The tests for this year's crop have not yet been tabulated but there is every reason to believe that the wheat this year is of the usual high standard produced in Montana and on a par with the crops of 1920,1921 and 1922.

Of the spring wheat tested for the three year period, 89 per cent graded Dark, the highest sub-class for this class of wheat. The 1923 crop dropped to 76 per cent Dark. The proportion of Number One wheat in this class was about the same over the four years, being approximately 78 per cent. Ninety per cent of this class of wheat tested 59 pounds or more per bushel and four samples tested 64 pounds per bushel, while the minimum requirement for this class is 58 pounds per bushel for Number One grade. The amount of dockage represented by foul seed and other foreign matter has been low compared with other states. The average of the samples tested was 2 per cent. Twenty per cent of the samples tested for the three year period contained no assessable dockage, and thirty-seven per cent of the 1923 crop contained no assessable dockage.

Of thewinter wheat tested for the three year period 96 per cent graded Dark. The effect of excess moisture was more noticeable with this class of wheat as the heavy rains occurred while it was being cut and threshed, but had abated considerably before the harvest of the spring grains began. For the three year period, 76 per cent graded Number One and 35 per cent contained smut in sufficient quantities to be subjected to a cash discount when sold. Of the 1923 crop only 41 per cent graded Number One and 34 per cent graded Smutty. For the three year period, 77 per cent tested more than 61 pounds per bushel, while of the 1923 crop only 24 per cent tested more than 61 pounds per bushel. The minimum test for Number One wheat of this class is 60 pounds. The average dockage assessed against this class of wheat was about the same as that of the spring wheat class, approximately 2 per cent while about 29 per cent contained no assessable dockage.

During the four years about the same amount of mixtures of different classes and varieties have been found. Fifteen per cent of all the samples tested contained mixtures of more than 10 per cent and probably 50 per cent contained some mixture ranging from 1 or 2 per cent up to 50 per cent.

The most noticeable defects found in our otherwise high quality wheat have been smut, mixtures of different classes, and damage caused by frost.

Wheat marketing during the past ten years has undergone some radical changes. Little was known ten years ago in this state of uniform grade rules. Different sections of the state used different grade designations and these often meant little in the large market centers. With the

advent of the United States Grain Standards Act and its enforcement throu Federal Grain Supervision, recognized grades came into general usage. The farmer and country buyer had hardly gotten accustomed to trading on this basis when a new factor rose up in the flour and bread making industries. The demand began to grow in the East for flour of uniformly high strength. It was found that this was best produced from high gluten or high protein wheat, providing,of course, that the gluten was of good quality judged from the standpoint of elasticity. First the gluten test was applied by many of the mills which test was gradually supplanted by the protein test, the latter now being in almost general use throughout the whole United States. The results of trading on this basis at the large terminal points soon brought about a noticeable reaction at country points. The country buyer is now confronted with two factors in considering the value of the wheat he buys. He must have some knowledge of (1) the grade of the wheat under consideration, and (2) the milling value within each grade as the range of prices paid by mills for wheat of the same grade is at the present time very wide.

From the standpoint of strength, Montana scores again as our wheat has proved to be not only of high quality from a grade standpoint, but also because much of it contains more protein and gluten of high quality than that grown in other states. The United States Department of Agriculture reports on April 3,1923, in its investigations of milling in connection with cars of wheat arriving in Minneapolis, that of 47 cars originating in Montana the range of protein found was from 13.54 per cent to 15.49 per cent and sold at premiums ranging from 18 to 22 cents per bushel. From South

Dakota, 44 cars ranging from 11.69 per cent to 12.74 per cent sold at premiums ranging from 1 to 5 cents; from North Dakota, 50 cars ranging from 11.48 per cent to 14.25 per cent protein sold at premiums ranging from 1 to 7 cents; and 6 cars from Minnesota in protein from 11.91 per cent to 12.71 per cent sold at premiums ranging from 3 to 5 cents.

As the marketing of wheat is now carried on, the judgment of quality is made by considering both the grade and the protein. The grade determines the condition and certain physical factors as to quality and is used principally as a working basis for arriving at a premium or discount. In other words, if the wheat is not of standard Number One Dark quality it is subject to a discount and the premium, if any, is determined from the protein content. That which applies to Number One wheat applies also to off grade wheat in the Dark sub-class to a lesser degree, that is to say, there is considerable range in quality in each numerical grade.

For the fiscal year ending June 30,1924, 846 samples were tested at Great Falls for protein. It is very probable that had we not been delayed until late in the crop season in beginning operations, at least two thousand more would have been tested. Since July 1st this year to date, 2,391 protein tests have been made, making a total of 3,237 since the equipment was installed in October,1923. The results this year have not yet been tabulated, but indications are that the average protein for spring will be 1 per cent higher this year than last, and that the average protein for winter wheat will be lower this year. Last year the highest average protein from any one station of all samples tested was Collins,Montana, 14.6 per cent; Kremlin,Fort Benton, Dutton,Tunis and Carter following, all of these stations

showing an avarago of 14.1 per cent or better. The lowest average protein from all samples tested from one station was Vaughn, Montana, with 12.16 per cent. The total range for the whole state was Valier low with 10.37 per cent and Collins high with 16.7 per cent. The spring wheat analyzed higher than the winter on the average. Sixty-five per cent of the spring wheat samples, and 45 per cent of the winter wheat samples tested more than 13 per cent protein. Some samples this year have tested as high as 19 per cent and others as low as 9 per cent.

As to the necessity for a laboratory at Great Falls for handling work of this nature, little need be said. There has been a steady and marked increase in the use of the facilities provided. For 1920, 2,194 samples were tested for grade; in 1921, 2,963 samples tested for grade; in 1922, 3,747 samples tested for grade; in 1923, 4,850 samples tested for grade and 846 samples tested for protein, and to date of the 1924 crop, 2,720 samples have been tested for grade and 2,391 for protein. With the ever increasing crop of wheat raised in Montana, and the probability that the yield will reach one hundred million bushels within the next ten years, there is every reason to believe that there will be more need each year of a grain testing department, and that this work will continue to be self-supporting.

REPORT OF GREAT FALLS GRAIN INSPECTION.

November 30, 1922. November 30, 1923.

1922	Car Inspection	Sample Insp.	Re-Insp.	Proteins	Misc.	Total
Dec.	264	53	1			$371.75
Jan.	221	66	3		$12.50	344.25
Feb.	198	40	5		17.67	305.17
Mar.	300	51	8		22.98	452.83
April	173	44	3		15.07	270.32
May	183	40	4		2.25	269.00
June	192	7				245.25
July	98	5	1		6.25	134.60
Aug.	182	80	1		1.36	290.85
Sept.	613	307	0		15.50	1012.00
Oct.	599	229	3	126	21.00	1073.50
Nov.	544	146	1	133	1.00	925.00
Total	3567	1068	30	259	$115.57	$5694.32

November 30, 1923. November 30, 1924.

1923						
Dec.	298	54	1	110	6.65	531.65
1924						
Jan.	211	24	12	61	6.00	372.75
Feb.	350	41	10	99	7.50	594.75
Mar.	230	40	6	86	6.25	419.75
April	222	31	2	50	32.50	387.25
May	234	27	2	112	27.00	455.75
June	224	22	1	69	35.00	402.50
July	142	23	1	57	23.70	277.45
Aug.	373	109	4	474	34.65	1064.65
Sept.	713	182	9	834	43.75	1923.50
Oct.	570	218	1	711	20.98	1609.98
Nov.	300	75		315	40.70	786.95
Total	3867	846	48	2978	$284.68	$8826.93

Last ten days of November 1924 estimated.

DIVISION OF HORTICULTURE.

William L. Shovell, Chief . . . . . Missoula.
Laura B. Ellithorp, Clerk . . . . . Missoula.
R. O. Young, Inspector. . . . . Hamilton.
Ed Fox, Inspector . . . . . Missoula.
J. A. Fossum, Chief Quarantine Officer. . Butte.
Roy Roush, Inspector. . . . . Kalispell.
R. E. Bancroft, Inspector . . . . . Billings.
- Part time only.

The past two years have been exceptionally hard on the fruit growing industry of Montana. Starting in the season of 1923 with prospects of a full crop a series of hail storms striking both the Flathead and Bitter Root districts during the month of August reduced the crop by at least 50 per cent. Again, the season of 1924 conditions indicated an exceptionally good crop but on June 6th the heaviest producing area of the Bitter Root valley experienced a freeze. Temperature dropped to 17 and remained below freezing for 7 hours, resulting in a total loss of the apple crop in the heaviest producing districts south of Victor. With the prospect of a 1,000 car apple crop it dropped to 125 car basis. In spite of these unfavorable conditions, however, we have maintained our market in the east and are in a position second to none on the apple market of the world, New York. As an indication of the position of the Montana McIntosh on the New York market will state that the average price of the Washington Extra Fancy and Fancy Delicious on the New York market in 1923 was $2.56, whereas the price for the Combination Extra Fancy and Fancy Montana McIntosh was $2.78. This season the Washington Delicious is slightly ahead owing to the

fact that there is a large crop of eastern McIntosh and a light crop of Washington Delicious with no Delicious in the eastern sections, hence a shortage of this variety.

Marketing of Fruit. The fact that the McIntosh is being planted extensively in the east has aroused the Department to the necessity of finding and encouraging other markets. An examination of the retail stores throughout the state showed that Montana is not consuming Montana apples but apples of low grade from our neighboring western states. With the object in mind of developing our home market for our home product, and having the active co-operation of the Butte Chamber of Commerce, the Department assisted in staging an Apple Show in Butte in the fall of 1923. This was repeated the present season, and in addition a display of Flathead fruit was exhibited at Great Falls. These shows differed from the ordinary exhibits such as are found at fairs in that they were composed of stock of our commercial grades. We feel this movement is a distinct success and will lead to a greater demand for our home grown apples.

Montana's fruit growing industry is now being built on a solid basis. In the early days of orchard development many varieties were planted that did not come up to expectations. At the present time there are no new plantings being set out but a movement is under way toward the elimination of the undesirable varieties and the replanting of McIntosh, which is really our only commercial apple.

The advent of two canneries in the Bitter Root valley has stimulated the planting of sour cherries but the growers are going slowly and feeling their way. In the Charles district, south of Hamilton, there has

been planted a considerable strawberry acreage. This has now passed the experimental stage and with the advent of a pre-cooling plant at Hamilton this year the berries are being successfully marketed in the east.

Insect Pests and Diseases. The growers begin to realize that insect pest and disease control is rapidly becoming the determining factor between success and failure in fruit growing. Satisfactory methods, however, have been worked out for the control of all of our insect pests.

Abandoned Orchards. There is a distinct menace to the apple growers in the western part of the state in the abandoned orchards throughout this section. These abandoned orchards are not the result of failure of the industry but merely the result of the orchard boom of 1908 - 1912, for during these years thousands of acres of land were planted to fruit trees, where, from almost every standpoint of fundamental orcharding, trees should not have been planted.

In order to get an accurate idea of the situation in regard to the abandoned orchards the Department has practically completed an orchard survey. This survey showed between five and six thousand acres planted in the Bitter Root and now abandoned, and leaving approximately an equal acreage to be cared for. These abandoned tracts are for the most part owned by non-residents but are adjacent to and adjoining many good orchards. It is merely increasing evidence that non-resident agriculture is not successful. The danger of this situation is that these abandoned orchards are not being sprayed and are the harbor for insect pests and diseases of all sorts. The Department has the authority to condemn and order the destruction of these tracts and in case the owner does not pull

the trees the Department is authorized to pull and destroy the trees adding the cost of the work, plus a 25 per cent penalty, as a lien or tax upon the property. The difficulty lies in lack of funds. It costs approximately $5.00 per acre to destroy these trees and in most cases this property is already delinquent tax property and we have a revolving fund in theory only. This situation is really the most serious factor that the fruit grower of western Montana has to contend with at the present time.

The Department in an effort to handle this situation cut down the inspection force in the Bitter Root Valley from 3 men on full time to 1, figuring that the money thus saved could be spent on abandoned orchard eradication. Since this reduction was made, however, the loss of the fruit crop in the Bitter Root Valley for 2 years seriously cut into our departmental revenue so there has been no surplus to spend on this work. Our suggestions for the remedy of this situation will be taken up under the heading of recommendations.

Inspection. Our apple and potato inspection and grade standardization has been conducted very much as in the past, continuing our joint state and federal agreement under which all state inspectors are licensed as federal inspectors of the Department of Agricultural Economics. The service has maintained the high standard of Montana products offered upon the markets.

Until this season the Department has maintained some twenty-five to thirty inspectors working on a fee basis in different parts of the state, their duty consisting in inspecting incoming fruit and nursery stock. A trip over the state showed that in many cases this work did not

serve any useful purpose and in a majority of cases it was impossible to secure qualified men at the different points so the work had developed into nothing more or less than a fee collecting agency. In March, 1923, this service was discontinued and inspectors maintained only at points where there was a fruit industry to protect and at points where a real demand existed on the part of the trade. With the exception of possibly Great Falls there has been no real reason for resuming the inspection service.

Quarantines. Montana is now enforcing its four principal quarantines, the alfalfa weevil, tuber moth and cellworm, blister rust, and the barberry. We are pleased to report that to date Montana is free from these pests and diseases and that the plantings of the harmful barberry are considerably reduced. Montana is one of the few states against which there are no quarantines by other states.

In addition to the enforcement of the regular quarantine measures, the advent of the Foot and Mouth disease outbreak in California placed an additional burden upon our force. Fruits and vegetables shipped from California were admitted into this state only when accompanied by a state or federal certificate certifying that the shipment did not originate in a Foot and Mouth disease infected area. This necessitated keeping a very tight check on all shipments. Montana, however, is particularly fortunate in that we have only one main point of entrance from California with practically all shipments into the state from California moving through Butte.

City Plantings. An entirely new phase of our work has developed

this past season. That is the question of insect pest and disease control in the city fruit and ornamental plantings. Early in the spring of 1923 the Department received a request for assistance from the City of Butte to combat the red spider on their shade and ornamental plantings. The demand coming at a time after the spraying season for the fruit grower was over made it possible for us to send a machine to Butte and under the supervision of Mr. J. A. Fossum and Mr. R. C. Young, of our inspection force, considerable experimental work was done. This work was in cooperation with the Parks and Playgrounds committee of the City Council. A similar call for assistance has been received from Kalispell, Helena, Great Falls, and Missoula. The Department has taken the stand that the spraying of city trees is not the function of the Department of Agriculture and while we are very glad to assist in an advisory capacity the work itself is the function of the city government. The Department can be actively interested only under one condition, and that is in the case of city trees becoming infected or infested with disease and insect pests which are adjacent to and a menace to the horticultural or agricultural interests of the state. This is a matter of state wide interest and will be discussed further under the head of recommendations.

Orchard Service. During the past two years our inspectors have been active in the enforcement of our laws pertaining to horticulture. Our various quarantine measures have been enforced and the inspectors have acted in an advisory capacity upon all matters dealing with orchard management and insect past end disease control. Condemnation notices have been served on some 1500 acres, and in addition 300 acres have been pulled

by the Department, and approximately 600 acres pulled as a result of our condemnation.

From time to time meetings have been held at different points throughout the state at which topics of interest to fruit and potato growers have been discussed. We have endeavored to stimulate the market demand for home products through the medium of our Apple Shows at Butte and Great Falls. We have co-operated with the Montana Experiment Station in conducting their work at the Station at Corvallis and have endeavored in every way possible to assist the fruit growers in the solution of all their problems.

Detailed Inspection Report. On the following pages is itemized the inspection work done by the Division of Horticulture since July 1, 1922 to and inclusive of October 30, 1924. Much of this work is in connection with the enforcement of the various quarantines and is aimed toward the protection of Montana plant life from pests and diseases that are exacting heavy tolls in other states.

JULY 1, 1922 TO AND INCLUDING JUNE 30, 1923.

FRUIT INSPECTED

Variety	No. Boxes.
Apples	395,862
Pears	33,267
Peaches	101,721
Plums-prunes	30,721
Cherries	5,716
Apricots	6,245
Quinces	67
Oranges	39,615
Lemons	21,767
Grapes	133,823
Grapefruit	7,575
Nectarines	50
Total	776,023
Total No. Carloads	1,226
Fees	$7,351.35

FRUIT CONDEMNED

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Total
Apples	3555	42		19		110	3726
Pears	218		4				222
Potatoes					25		25
Peaches				4			4
Strawberries				200			200
Grapes				12			12
	3773	42	4	235	25	110	4139

Class 1. Coddling Moth.
Class 2. Scab.
Class 3. San Jose Scale.
Class 4. Quarantine #7-Alfalfa Weevil.
Class 5. Quarantine #6-Tuber Moth.
Class 6. Under Grade.

Note: Inspection service discontinued March 1, 1923 at all points except Butte, Helena, Kalispell, Billings, Missoula, and Bitter Root Valley points.

JULY 1, 1922 TO AND INCLUDING JUNE 30, 1923.

NURSERY STOCK INSPECTED

Variety	No. Plants
Apples	5,490
Pears	568
Peaches	155
Plums-Prunes	1,510
Cherries	11,166
Apricots	46
Quinces	5
Grapes	593
Strawberries	65,562
Blackberries	1,904
Raspberries	8,951
Currants	632
Gooseberries	606
Roots	78
Seedlings	23,404
Shade	6,564
Ornamentals	20,335
Evergreens	212
Miscellaneous	3,438
	151,239
No. car lots	2
Fees	$356.19

NURSERY STOCK CONDEMNED.

	Root Gall	Crown Gall	Fungus	Blight	Rose Gall	Totals
Apples	3	1				4
Raspberries	1	1				2
Roses			1		20	21
Cherries				1		1
	4	2	1	1	20	28

Note: Inspection service discontinued March 1, 1923 at all points except Butte, Helena, Kalispell, Billings, Missoula and Bitter Root Valley points.

JULY 1, 1923 TO AND INCLUDING JUNE 30, 1924.

FRUIT INSPECTED

Variety	No. Boxes
Apples	224,106
Pears	15,466
Peaches	78,802
Plums-Prunes	22,279
Cherries	400
Apricots	3,039
Quinces	123
Oranges	47,064
Lemons	13,701
Grapes	188,079
Grapefruit	253
Miscellaneous	2,968
Total	601,280
Total No. Carloads	686
Fees Collected	$3,833

FRUIT AND VEGETABLES CONDEMNED

	Class 1	Class 2	Class 3	Class 4	Totals
Apples	2282	21	1022	1	3326
Pears	3	167			170
Oranges				8	8
Cherries				18	18
Peaches				4	4
Apricots				4	4
Plums				1	1
Figs				2	2
Cantaloupes				13	13
Potatoes				47	47
Misc. Vegetables				9	9
	2285	188	1022	107	3602

Class 1. Codling Moth.
Class 2. Oyster Shell Scale.
Class 3. Scab.
Class 4. Quarantine-Foot and Mouth Disease.

JULY 1, 1923 TO AND INCLUDING JUNE 30, 1924.

NURSERY STOCK INSPECTION

Variety	No. Plants
Apples	5,619
Pears	117
Peaches	89
Plums-Prunes	896
Cherries	4,372
Apricots	30
Quinces	7
Strawberries	26,630
Grapes	393
Blackberries	1,050
Raspberries	4,227
Currants	1,302
Gooseberries	213
Shade	9,244
Ornamentals	17,562
Evergreens	97
Grafts	2,008
Seedlings	10,840
Miscellaneous	511
Total	85,207
Number carlots inspected	2-3/4
Fees	$257.98

NURSERY STOCK CONDEMNED

	Class 1	Class 2	Class 3	Class 4	Class 6	Class 6	Totals
Shade	3		5				8
Roses		1				16	17
Pears				1			1
Currants					1		1
Ornamentals						35	35
Cut Flowers						17	17
Total	3	1	5	1	1	68	79

Class 1. Fungus.
Class 2. Root Gall.
Class 3. Scale.
Class 4. Blight.
Class 5. Quarantine #8-Blister Rust.
Class 6. Quarantine -Foot and Mouth Disease.

JULY 1, 1924 TO AND INCLUDING OCTOBER 30, 1924.

FRUIT INSPECTED

Variety		No. Boxes
Apples		40,211
Pears		10,589
Peaches		48,071
Plums-Prunes		12,468
Apricots		2,515
Oranges		10,522
Lemons		3,807
Grapes		150,941
Miscellaneous		330
	Total	279,474
Total No. Carloads		269
Fees		$1,460.75

FRUIT CONDEMNED

	Class 1	Class 2	Class 3	Totals
Apples	3954	1513	1	5468
Pears			5	5
Peaches		2268	4	2272
Plums			7	7
Lemons			1	1
Grapes			2	2
Pineapples			1	1
Figs			1	1
Vegetables			1	1
Total	3954	3781	23	7758

Class 1. Coddling Moth.
Class 2. Quarantine #7-Alfalfa Weevil.
Class 3. Quarantine-Foot and Mouth Disease.

No nursery stock inspected or condemned during this period.

DIVISION OF LABOR AND PUBLICITY

Louis A. Campbell, Chief.
Barbara A. Scharr, Clerk.

Land Settlement. The time is rapidly approaching when Montana can expect to see new settlers turning their attention to this state looking for a possible place to buy a farm home or to rent. The drift from the farms to the cities that has been so pronounced during the past few years has practically stopped in 1924. It is reasonable to expect that the tide will swing the other way before long. The national agricultural situation is clearing up. Farmers' sons, farm renters and farmers who have been forced to sell out in eastern states will be looking for new homes. Montana has the advantage to attract them if they can learn of the facts, because they will be that class of people who have only a small amount of capital and will need to start under conditions where their capital, experience, and possibly other resources can be employed to the fullest advantage.

How many of these people will be finally attracted to Montana will depend a great deal on the attitude of the state toward solving the land settlement problem with which Montana is confronted, and the competitive service this state will have to offer new settlers when compared to the service of other states. The fact that the United States is facing an increasing scarcity of land resources has been obscured during the last few years because this country has temporarily over-expanded for export production at a time when the expected demand for our products

did not materialize as fully as had been expected, and due to the fact that we have been cutting our timber from a stored supply. But our over expansion for export is being gradually offset by adjustments in acreages devoted to export products and by our increasing population. As for our timber resources, we are cutting from our timber supply ten times as fast as we are growing it. An article in the 1923 Yearbook of the United States Department of Agriculture makes the statement that under the most conservative estimates of adjustments to changing conditions we will need to increase our land in harvested crops and improved pasture by at least forty million acres during the next twenty five years, that this increase can be expected to come from three classes of land: the heavy cut over soils of the eastern half of the United States; the lighter soils of our more humid regions, and the best of the land in our semi-arid territory. Further analysis of the problem from a national standpoint indicates the increasing need of getting our farm lands in the uses for which they are best adapted, that is for harvested crops, pasture, or growing our needed timber supply. Promiscuous and misdirected settlement and development of new lands has continually led to attempts to farm lands which were not suitable for such purposes or to develop new land through drainage or irrigation projects where the costs made such projects economically unsound.

The reason for reviewing these facts at this time is because they have such a direct bearing on the land settlement problems of Montana. Among other things they indicate that: there is a growing sentiment in favor of National and State cooperation in the control and direction of the settlement of new land; that in spite of this each state has

advantages and that there will be keen competition among states for new settlers; and that the states which face this problem squarely now will have the best opportunity to attract new settlers and place them under conditions where their success and permanency is reasonably assured, which later would mean a strong step forward in the development of the agriculture of that state along safe lines, and the employment of the land for purposes for which it is most economically adapted.

Other states have long recognized this need and many of them have advanced far beyond Montana in meeting the situation. California, Oregon, Wisconsin, Minnesota and Michigan are among those having regularly organized immigration and colonization departments looking toward the needs of new settlers. Their activities have met with varying success depending somewhat on the plans followed, but on the whole it is safe to say all of them have accomplished constructive results and the work is recognized as of increasing importance.

Recognizing the need in Montana for more people, qualified by experience, training and capital to succeed, and in view of the facts mentioned above, a Land Settlement Congress was called in Helena in the spring of 1924 to consider all phases of the problem, and to make recommendations. This Congress represented all of the various organizations and institutions of the state interested in her welfare and development. The Congress recommended the development of a service in the State Department of Agriculture, Labor and Industry that would consolidate the efforts of every public and private agency in Montana on a definite and state-wide program of land settlement, and that a committee be appointed to advise, co-relate

and aid in carrying forward such a program. Responsibility for carrying out the work of the department as so recommended has been placed with the Division of Land Settlement, Labor and Publicity. The committee has been appointed by the president of the Montana State College who also served as chairman of the congress.

This committee is now known as the State Land Settlement Advisory Board. Its members are:

W. S. McCormack, Kalispell, representing the Farm Loan Associations.
H. W. Buell, Bozeman, representing the Montana Bankers' Association.
W. L. Stockton, Clarkston, representing the Montana State Farm Bureau.
W. J. Hopper, Joliet, representing the Montana Farmers' Union.
J. L. Humphrey, Great Falls, representing the Montana Farm Mortgage Bankers' Association.
H. W. Heynolds, Lewistown, representing the Montana Real Estate Dealers' Association.
W. A. Selvidge, Billings, representing the Montana Development Association.

The status of the board is at present advisory. They do not have control over the activities of any organizations other than that of exposing misrepresentations or unfair statements through giving it general publicity. They serve without pay,giving their services in recognition of the great need of the state, and an unselfish interest in the future welfare of Montana.

The Board has held two meetings which have resulted in permanent organization and the following specific recommendations for a land settlement program. An advisory committee of from five to seven members to be appointed in every county in the state. Such committees to investigate and report to the Board upon all colonization or land settlement

projects for their county. Each member shall be available for the individual settler as a reliable source of information and shall also assist the Board in gathering necessary information. For answering inquiries from prospective settlers a series of letters shall be prepared by the various state institutions which can be mailed direct from the land settlement office, those letters to be followed by informational letters from the various county advisory committees. The board also recommends concentrating in the Department of Agriculture all work having to do with land settlement; a continuation of the county soil surveys looking toward a land classification in Montana; and the appropriation of necessary funds for the Department of Agriculture to provide for the permanent development of a land settlement program.

Labor Activities. Labor activities of the department include the supervision of state child labor laws, direction of free employment offices, arbitrating wage claims, and cooperation with the United States Free Employment Service in collecting reports and handling employment activities in the state, particularly as it [illegible] to war work labor.

Practically the administration of child labor laws is limited to the collection of school census from county school superintendents. It has not been necessary to make any investigations nor carry out many definite planned activities in this field. The census records are kept on file in the department and whenever questions arise as to the age of a child who might be seeking employment in industries other than farming a certificate of the child's age is issued. This certificate must be

presented to the employer who signs and returns the same to the department for record. During the past two years twenty-eight such certificates have been issued.

The state now has ten free employment agencies maintained by the following cities and towns: Hamilton, Lewistown, Butte, Great Falls, Kalispell, Livingston, Billings, Missoula, Bozeman and Moccasin.

These offices are required to report each month to the department giving a general summary of labor conditions and the activities of the preceding month. In addition to reports from such sources, county agents and commercial club secretaries send in regular monthly reports on labor conditions. These are summarized and sent out for general publicity. Such reports are of particular value in handling the harvest labor needs and in distributing the labor supply over the state where the demands are heaviest. The activities of free employment offices have proven to be of real value to Montana, and the fact that the offices are being used is indicated by the following figures. During the past two years twelve thousand one hundred and ninety-eight requests for work have been registered; five thousand six hundred and eighty-three requests for "help wanted" have been registered. Four thousand four hundred and eighty male applicants and seven hundred and seventy-six female applicants have been referred to positions of which three thousand nine hundred and two male and six hundred and twenty-seven female have been definitely placed.

The department has received forty wage claims involving a total of Seven Thousand One Hundred One Dollars and Fifty-three cents ($7101.53). Many of these claims are just, but due to the fact that the

labor laws of the state do not permit this department of labor to bring any action in the matter of such adjustments it has been found difficult to do much. As a general policy the only thing that can be done is to try to reach a mutual understanding on the part of the parties involved in the disputes and get them to make an amicable settlement. Most of the claims, however, come from migratory labor and other than the advise that can be given them relative to the protection they have, little else is usually accomplished. Usually if a satisfactory adjustment is made the contending parties never notify the department and as a consequence no definite record is available as to the amount of claims that have been collected.

Through the cooperation of the United States Free Employment Service the chief of the department of labor carries the title of Federal Director and for correspondence dealing directly with employment work of this character is entitled to the franking privilege. In addition the department is furnished a full time stenographer by the Federal Service. Regular monthly reports are forwarded the United States agency dealing with industrial, farming, and labor conditions. During the harvest season the department furnished this year offices at Great Falls, Bainville, and Billings either through the regular free employment offices or by renting space for the time needed. These offices were used by the harvest labor bureau agents of the United States Employment Service. The Federal department also maintained a corps of trained field men in the state to assist in directing migratory labor. By means of this organization and the offices of the service maintained in adjoining

states plenty of men were available to hande the harvest of farm crops without any losses. Field offices so established were in direct daily touch with county agents, commercial clubs and Montana employment offices so that as soon as calls were received for help they could be accomodated at once. The plans worked very satisfactorily this year, partly because there was a plentiful supply of men, but if a year should come when Washington, Oregon, North Dakota and South Dakota ever have bumper crops simultaneously with Montana the system will be severely taxed to meet the demands. The need for maintaining some such service is therefore acutely apparent.

Publicity. The publicity activities of the division have included: the publication of the "Montana Industrial Resource Edition," and Volumes One and Two of the "Montana Farm Review;" answering correspondence and inquiries on Montana farm and tourist opportunitiss; and the "Montana Month" advertising campaign.

Montana's Indistrial Resource Edition was issued early in 1923. Eight thousand copies were printed and up to date approximately three thousand have been distributed. Its purpose is to present a picture of the state as it is now and to show the basic industrial and agricultural resources upon which the future dsvslopment and possibblities for expansion rest. It gives a statistical summary of Montana facts followed by a discussion of the industrial, farming and stock raising possibilities, the geography of production, and a discussion of Montana climate. These subjects are treated from the standpoint of the state as a whole. Space

is then devoted to an analysis of each county. The appendix contains a summary of the fuel and energy resources, precious gems, minerals, and forest resources of the state with statistics of the various lines of production. This edition fills a long felt need for authentic information on Montana, and has received wide distribution. It is now used in many of our schools as a part of the regular studies in geography and requests have come from schools, libraries, and similar institutions from nearly every state in the Union. Business concerns of this and other states refer to it continually, and investors and prospective settlers find it of real value in assisting them to become familiar with Montana conditions. Requests for copies come to the department daily.

The Montana Farm Review is issued yearly. The first volume was printed in 1923 and volume two in 1924. It is issued in cooperation with the Montana Cooperative Crop Reporting Service of the United States Department of Agriculture. Ten thousand copies of Volume One and six thousand copies of Volume Two were printed. Volume One, the first publication of its kind, gives a short historical sketch of agriculture in Montana which is followed by a discussion and statistics on lands, irrigation, livestock and livestock products, crops, timber, flour mills, climate, frost data, farm loan associations, etc., of the state. It is a statistical analysis of Montana agriculture from as far back as records were available. Volume Two and succeeding volumes will carry this data up to date each year. Its purpose is to keep a record of Montana agriculture, to show the development of various phases and their relation to each other, to show the trend of activities, and to form a basis upon

which to lay plans for future developments of agriculture and other industries. Like the Resource Edition, the Farm Reviews have met a long felt need and have received wide circulation. They are not only used continually by agricultural men and farm organizations but practically every line of industry in Montana uses the Farm Reviews for reference. Commercial organizations, milling concerns, bankers, real estate organizations, loan associations, railroads, and many others continually request copies. They are of particular value in meeting the needs for information in answer to inquiries from prospective settlers on Montana lands.

While these two publications answer the need for information on the general state-wide agricultural and industrial situation, they do not fill the need for information on Montana scenic attractions. It is estimated that one hundred and twenty-five thousand tourists came to Montana during the year of 1924 in cars. The tourist travel is a continual source of income to Montana business and gives promise of steadily increasing. Commercial clubs and similar organizations distribute pamphlets on Montana's scenic attractions but these are all more or less of a local character. There is need also for an authentic road map of the state that will give definite information on the various highways so that a tourist will not have to continually stop at every town for information. A tourist edition, state-wide in scope, will also attract the tourist to many beautiful spots which he might otherwise overlook. Such a pamphlet was prepared by the division together with a revised road map but due to the lack of funds it was never published.

Inquiries received have been of such a varied character that it is difficult to give them any specific classification. In general, however, they have covered such subjects as Montana laws, and farm industrial, oil, mineral, timber, irrigation, and tourist resources of this state. The publications mentioned above, while answering the demands for general information, do not go into sufficient detail for the seperate districts and counties of the state. We are not in position to give answers to questions on the markets, schools, types of farming, soils, irrigation possibilities, and similar data in which a new settler is particularly interested, in sufficient detail without considerable loss of time. The information is available but the department plans to collect it in classified form so that it can be kept on hand for ready reference. It is expected the organization of county land settlement committees will materially facilitate the gathering and classifying of this information.

The "Montana Month" advertising campaign originated through the joint activities of the Great Northern, Northern Pacific and Burlington railroads. They have been carrying out a very comprehensive group advertising program to advertise the Pacific Northwest. Through a series of advertisements in national magazines which have extensive circulation, the foundation was laid for a more intensive campaign to follow. The advertisements featured the Pacific Northwest as a unit to focus the attention of the east on this territory and let it be known as a definite part of the United States rather than " some place out west." All of the resources and opportunities of the region, its growth

and possibilities for future development, were given prominence. The more intensive follow-up campaign included among other things naming a month for each state of the Pacific Northwest during which all advertising would be concentrated on the opportunities for home building, industrial developments, and tourist attractions for that state, placing the greatest emphasis on the farming possibilities. December was set aside for Montana Month, and the various organizations of the state, both public and private, were asked to cooperate.

In order to harmonize the advertising statements that were sent out with the facts, and to prevent the distribution of misleading information, the direction of the campaign was placed with this department. A state publicity committee with the Commissioner of Agriculture as chairman, met with the railroad representatives and adopted an advertising program which had in view the accomplishment of the following general purposes: to place the facts about Montana before the public so that they might have a better and truer understanding of Montana; to carry on an educational campaign that would acquaint Montana people with the existing conditions and opportunities of the state; and to attract new people to Montana. This plan included rural and civic meetings in Montana communities, talks in theaters and clubs, programs in schools, newspapers stories and articles to be carried in Montana papers and to be mailed to friends and relatives in the east, radio talks from broadcasting stations, Christmas greetings to tourists who came to Montana during the summer, Montana product shows, articles in eastern magazines, publicity in eastern hotels, and similar activities including the printing

of two million letter inserts that could be used in all Montana mail during the entire month. The railroad activities included displays in all railroad offices of Montana products, pictures in observation cars, Montana menus on dining cars, posters distributed throughout all the territory covered by their lines, advertisements in folders and time tables, rural meetings in eastern communities, moving picture films to be shown in eastern theaters, and the use of Montana letter inserts that were to be furnished them by the people of this state.

To finance the letter inserts the state was solicited through commercial clubs and similar organizations and Five Thousand Dollars ($5000.00) raised for this purpose. Other committees were appointed to carry out the details of the plans and every organization given a particular part of the program for which they were held responsible. As this report is being written Montana Month is just starting. Newspapers, organizations, schools, and individuals have responded generously to the work that has been assigned to them and the campaign is well under way. H. R. Cunningham, vice president of the Montana Life Insurance Company, has been appointed Director General and is devoting a good share of his time to attending meetings throughout the state and stimulating interest in the purpose and meaning of the program. It is reasonable to expect a certain number of inquiries will be directed to Montana and emphasis is being placed on the importance of having these inquiries directed to this department so that they may be linked up with the plans for land settlement work, and the fact that Montana is now prepared to offer service to new settlers may become generally known.

Crop Reporting and Statistics. This department cooperates with the Bureau of Agricultural Economics of the United States Department of Agriculture in helping to maintain for Montana a cooperative crop reporting service. This service gathers statistical information on Montana agricultural conditions and production, reports of which are issued monthly. Office room and Ninety Dollars ($90.00) a month toward the support of a stenographer is furnished by the department. The department also contributes from time to time small sums for emergency help necessary to maintaining the service. The funds contributed for the past two years have averaged approximately One Thousand Dollars ($1000,00) per year.

The Co-operative Crop Reporting Service tabulates information returned by the annual farm census which is collected by the assessors of the counties in the state on blanks supplied by the State Department of Agriculture. This is important since it helps give an accurate basis of acreages in the various crops upon which estimates of yields are made. In 1924 all the counties of the State returned completed farm census reports, except Flathead, Lake, Glacier, Lewis and Clark, Meagher, McCone and Big Horn.

DIVISION OF DAIRYING

George H. Webster .....Chief
Ben Beach .....Deputy
Joyce Seely .....Clerk

During the period there has been a tremendous growth in the dairy industry in Montana. This growth is part of a nation wide movement towards a diversified agriculture, and is largely due to the fact that dairy products remained more constant in price than most other products of the farm during the deflation period of 1920 to 1922.

This increase in production has brought up difficulties and questions for solution which, while apparent sometime ago, were not of such serious concern as they now are.

Production of creamery butter in Montana for the year 1923 was 10,721,535 lbs., an increase of more than 38% over any previous year. Full reports for the first nine months of 1924 show a production of about 11,000,000 lbs., indicating a total of from 14,000,000 to 15,000,000 lbs. for the present year.

The production of cheese for 1923 was 813,907 lbs., showing no increase in production for several years. Reports so far this year show the production to be about the same as last year. At present the farmers of this state show a decided preference for skimming their milk and sending the cream away, as it relieves them of the necessity of delivering their product every day, as must be done with milk to be made into cheese. Farms are still too widely scattered and dairy sentiment not yet strong enough to make cheese-making successful in most parts of Montana.

The production of ice cream in 1923 was 711,762 gallons. The first nine months of 1924 show 465,372 gallons. The per capita consumption of this dairy food is not so large in Montana as in many of the other states. This is no doubt due, in some measure, to climatic influence.

There is no doubt a much larger use of milk and milk products, per capita, in Montana at the present time than formerly, and it is gratifying to know that the farmers of this state are not following the example of the farmers in many of the other states by producing cream to sell and buying oleomargarine to use at home. It is to be hoped that this inconsistent and suicidal policy will not gain headway among the farmers of our state.

There is a growing concern in the minds of many regarding the future of the dairy industry in the United States. There is reason for the uncertainty and doubt existing in the minds of those who look into the future and see a period of depression approaching in this important part of agriculture. Production has reached the point in this country where it more than meets consumptive demands. We have in the United States, at the present time, the largest accumulation of butter in storage in the history of this country. With the increase in production in many foreign countries, together with the increase which is still going on in America, it is inevitable that prices must be low or consumption increased.

The use of oleomargarine is increasing in the United States at a rate sufficient to cause those interested in the dairy industry to

think seriously about employing measures to stop the further increase of the use of substitutes for butter and to induce people to use more butter.

Laws against the manufacture and sale of oleomargarine are being advocated, and in some states have been passed. It is my opinion that laws of that kind are not needed so much, as such a change in the methods of production and manufacture of dairy products as will result in improvement in quality. When farmers who produce cream take better care of it, and when better methods of handling it after it leaves the farms are employed, then quality will be improved and we shall have a right to expect a larger use of butter and a better market will result. When cream is kept on the farms until it is a week or two old and in places where it will absorb odors and flavors from kitchens, bedrooms, store-rooms and cellars; where no regard is paid to proper cooling and keeping, then we must have bad cream and low grade butter. But when just as much is paid for cream of that kind as for the best that is produced, what incentive has the farmer to produce good cream? Unfortunately this is the condition which confronts us now. By the present methods of buying cream, which are still largely through the cream stations, there is little chance of improvement, as grading is hardly possible at the cream stations, and competition among the creameries employing them forbids their paying for cream on a quality basis.

In 1922, the dairy interests of western Canada were confronted with a serious situation, owing to American markets being practically closed to Canadian butter by the duty which was imposed by the Emergency

Tariff Act of 1921. It was about the time of the passage of this act that the creamery men of Alberta asked for and secured compulsory grading of cream under government supervision and the wiping out by law of all cream stations.

This law provides that government cream graders shall be stationed at creameries and grade the cream just as soon as it arrives, whether from the trains or from the hands of producers that bring the cream. It is not allowed to stand in the cans until the grader has nothing else to do, but is graded just as soon as possible after it arrives. It is graded mostly by taste, but when there is doubt about a lot of cream, it is set aside and tested for acidity. It is handled very rapidly. Each large creamery employs a grader constantly and sometimes two. Where there are two or more small or medium sized creameries in the same town, one man can usually handle all of the grading by working part time at each creamery. In Canada graders are required to run check tests, testing usually about six or eight per cent of the cream, to determine whether or not the creameries are giving correct results of the tests to their patrons. All expense is pro rated among the creameries, and deducted by them from the cream checks.

Egg Grading and Licensee for Graders. Early in 1924, Miss H. E. Cushman, Poultry Specialist in extension work for the Montana State College, took up with the Department of Agriculture, the matter of egg grading and the licensing of egg graders. The purpose of this work was to encourage the production of high class eggs and by grading to standardize the product. There is a demand in some of the large towns of Montana for

carefully selected eggs; and if a standard grade can be established for Montana eggs to fill this demand, with a little extra effort on the part of the egg producers, they can supply our towns with this class of eggs. At the present time the supply is drawn from the Pacific coast. It would seem that Montana should produce eggs enough for its own needs. The issuing of grader's licenses were turned over to the Division of Dairying. Examinations for licenses are held by Miss Cushman, and Mr. Beach, field man for this division. The progress of the work has been very slow, only four licenses having been issued up to November 25, 1924.

Results of the Dairy Laws of 1923. In 1923 a complete revision of the dairy laws was made. Some of the former laws were so worded that they could not be enforced, and so many changes had been made from time to time that what laws we had were mere fragments, lacking in coordination. In some instances, departmental work overlapped and in others there was no provision made for taking care of matters prescribed by law.

One of the most important measures passed was a provision for the regulation of cream stations. It can truly be said that the condition of the cream stations in Montana at the beginning of 1923 was deplorable. Not only were the methods of handling cream at the stations bad, but the stations were themselves in most instances totally unfit for the purpose.

During the summer of 1923 inspection showed that scarcely any of the cream buying stations were properly equipped to cleanse the cans to be returned to the farmers, floors were bad, walls in many cases not

tight enough to exclude flies and dust. They were poorly lighted and nearly all were in buildings where cream would be contaminated by the surroundings. In most cases the keepers of those stations were aware that their methods were wrong and their places of business bad, but they had never been instructed in even the rudiments of the proper care and handling of cream.

Often when a place was found which was particularly bad, the keeper would point to the bad practices of someone else in the business, and make the excuse that his place was no worse, or only a little worse, than his neighbors'. The attitude of many of the cream station keepers and the low order of the stations, were the worst possible examples for the farmers who produced cream.

Owing to the fact that up to the latter part of March, cream stations were licensed by the Livestock Sanitary Board, and as some did not secure licenses, the exact number in operation June 1, 1923, is not known, but probably there were as many as three hundred.

There are now one hundred forty-seven stations that have been licensed up to November 24th of the present year.

Attack on the Law. In June 1923, some of the creamery men of Montana brought suit in the District Court of Lewis and Clark County, to test the constitutionality of the present dairy laws, and an injunction was issued which prevented the enforcement of any of the dairy laws for about two months. During that time, the general tone of the dairy industry in Montana became noticeably lower, and it took several months to repair the damage done. Much butter was put out that was under weight

and more that was too high in moisture. Samples were found containing as high as 34% moisture. Cream stations were in worse condition than before, if such a thing were possible, the operators thinking that the law was set aside. Since June 1, 1923, one hundred six cream stations have been closed by order of the inspector of the Dairy Division. Others have gone out of business voluntarily and some of those which were closed have been fitted up to comply with the law and are now among the best in the state. On the whole the cream station situation is now better than I could ever have hoped for.

Prosecutions. For a time in 1923, owing to the suspension of the law, there was much illegal butter sold and some time elapsed after the law was again set in motion before the bad practices of some creamery men could be stopped. Between June 30, 1923 and November 24, 1924, there have been the following prosecutions for violations of the law:

Name	Address	Offense	Fine	Result
Sun River Cry.	Gt. Falls	High Moisture	$25.00	Plead guilty
Sun River Cry.	Gt. Falls	High Moisture	50.00	Plead guilty
Midget Cry.	Butte	High Moisture	25.00	Plead guilty
Midget Cry.	Butte	High Moisture	25.00	Plead guilty
Glacier Cry.	Gt. Falls	Short Weight	25.00	Plead guilty
Glacier Cry.	Gt. Falls	High Moisture	25.00	Plead guilty
Montana Cry.	Bozeman	Mfr's name not on pkg.	10.00	Plead guilty
Eden Coop. Cry.	Eden	High Moisture	25.00	Plead guilty
Milk River Cry.	Chinook	High Moisture	25.00	Found guilty
Milk River Cry.	Chinook	Short Weight		Case dismissed
C. D. Hayen	Twete	Short Weight		Case dismissed
C. D. Hayen	Twete	Mfr's name not on pkg.	No fine	Found guilty
Metropolitan Market	Butte	Mfr's name not on pkg.		Pending
Western Cry.	Sidney	Short Weight		
		High Moisture	10.00	Plead guilty
Park Cry.	Livingston	Short Weight	25.00	Plead guilty

Name	Address	Offense	Fine	Result
Park Cry.	Livingston	Short Weight High Moisture	$50.00	Plead guilty
Park Cry.	Livingston	High Moisture		Pending
Swift & Co.	Gt. Falls	High Moisture		Pending
Gallatin Milk & Produce Co.	Bozeman	Short Weight		Acquitted

There is apparently a much better observance of the law now than formerly, there being only a few samples of butter found within the last six months that were below standard for weight or too high in moisture.

Improvement in Transportation of Dairy Products. Early in the present year, the Chief of the Dairy Division took up with the railroads the matter of better refrigerator car service for dairy products. There was urgent need for this as shippers of less than car lots of butter, seeking a market east or on the Pacific coast, were obliged to ship locally to concentration points at a high local freight rate and then transfer the butter to another car or store until a sufficient amount could be accumulated to make up a full car. Often the shipment had to be made in a car in which fruits and vegetables were shipped, which made the car really unfit for the purpose. In addition to that, the cars were opened for the purpose of taking out merchandise at various points along the road, which had an unfavorable effect on the temperature of the cars so handled and caused the quality of the butter to seriously deteriorate. The Chief of the Dairy Division asked that the cars in which butter is shipped be refrigerated at the initial point of shipment; that no other merchandise be allowed in them and that they be stopped at such points as are required for further loading with butter until a full carload is put in, then sent to their ultimate destination.

It required concurrent action of all the railroads crossing the state to put such a service in operation, so it took some time to get the arrangements complete. The service was installed on all the transcontinental roads crossing Montana, but applied only to shipments east. As the creamery operators in Montana frequently wish to avail themselves of the Pacific coast markets, the same service was granted to those who ship west. The railroad officials took a broad view of the question and recognized the fact that the dairy industry needs every encouragement possible at this time in the matter of improvement in quality.

Licenses. A graduated scale of license fees for creameries, cheese factories and ice cream plants was provided by the Eighteenth Legislative Assembly. The following is the amount collected from licenses from June 30, 1923 to November 22, 1924:

Cream Stations	$900.00
Ice Cream Factories	685.00
Cheese Factories	55.00
Creameries	695.00
Babcock Testers	300.00
Egg Graders	4.00
TOTAL	$2639.00

MISCELLANEOUS

Poultry Husbandry

The Department of Agriculture during the season of 1923 and 1924 has followed the practice of 1922 in dividing the budget allowance for poultry husbandry between state and local or district standard-bred poultry shows. Notice is given early in the season of the availability of these funds, and applications are received until November when a pro rata distribution is made. Less money is being allotted in 1924 than in 1923. The shows which applied for and received state aid are set forth in the following summary:

Season of 1923

State Show	Stanford	$900.00
Chouteau Co. Poultry Show	Fort Benton	50.00
Sweet Grass Co. Poultry Show	Big Timber	45.00
Big Horn Co. Poultry Show	Hardin	45.00
Blaine Co. Poultry Show	Chinook	100.00
Custer Co. Poultry Show	Miles City	100.00
Powell Co. Poultry Show	Deer Lodge	67.50
Sanders Co. Poultry Show	Hot Springs	45.00
Stillwater Co. Poultry Show	Columbus	45.00
Eastern Montana Poultry Show	Glendive	45.00
Midland Empire Poultry Show	Billings	50.00

Season of 1924

Montana State Show	Great Falls	$800.00
Custer Co. Poultry Show	Miles City	50.00
Chouteau Co. Poultry Show	Fort Benton	50.00
Powell Co. Poultry Show	Deer Lodge	50.00
Midland Empire Poultry Show	Billings	50.00
Carbon Co. Poultry Show	Red Lodge	50.00
Pondera Co. Poultry Show	Conrad	50.00
Sweet Grass Co. Poultry Show	Big Timber	50.00
Western Montana Poultry Show	Missoula	50.00
Big Horn Co. Poultry Show	Hardin	25.00
Eastern Montana Poultry Show	Glendive	50.00

Apiculture

The money allowed for work in bee disease control in the state has been entirely inadequate, yet some accomplishment has been recorded.

Mr. B. J. Kleinhesselink of Hardin, former president of the Montana Beekeepers' Association, continued as inspector on a per diem basis. In addition Dr. O. A. Sippel of the State College at Bozeman has been deputized for special work, and resident non-salaried inspectors have been used at times in clean-up work.

Since July, 1923, Mr. Kleinhesselink made four inspection trips as follows:

During September, 1923, all apiaries in the near vicinity of Miles City were inspected, and disease was found in three of the eight yards. Owing to the lateness of the season no colonies were treated but instructions were given how to proceed with the work of "cleaning up" when the proper season arrived.

October, 1923, a trip was made to Nashua and diseases found which had, however, been cleaned up by the owner.

May, 1924, all apiaries in Sun River Valley from Simms to Great Falls were examined and diseases found in three yards. A general clean-up under the direction of Mr. Baldwin was planned at that time.

September, 1924, apiaries in the vicinity of Park City were examined and diseases found. Instructions were given as to method of cleaning up.

October, 1924, a trip was made to Absher, Musselshell County, for the purpose of cleaning up a lot of diseased bee appliances. With the assistance of Mr. Bergman this work was done.

International Hay and Grain Show

In order to stimulate Montana participation in the International

Hay and Grain Show held annually at Chicago, and to make it possible for Montana to compete with Canada, and with other states of the Union for the world's sweepstakes honors in grain, this department this year allotted $175.00 to the Montana Pure Seed Growers' Association to assist in financing the Montana exhibit at Chicago. In addition bonuses were offered to winners of first and sweepstakes honors in the important grain divisions. Bonus offers also were made during the season of 1923. As a result the following bonuses were paid:

Season of 1923

Clyde Norton, Columbus, $50.00, first prize in hard red winter wheat.

Season of 1924

L. E. Peterson, Victor, $50.00, sweepstakes in oats.
C. Edson Smith, Corvallis, $50.00, sweepstakes in barley.
C. Edson Smith, Corvallis, $50.00, reserve champion wheat won in hard red winter class.

Work Done by Federal Cooperation

Attention is directed to the fact that the cooperative work now being carried on jointly in Montana by the U. S. Department of Agriculture and the Montana Department of Agriculture is a result of the present form of organization of agricultural work in this state. The state is distinctly the beneficiary of this arrangement. Work that is done is largely financed by the federal government, and relieves the state of the necessity of doing the same work at its own expense.

The state labor director is also named federal labor director for Montana and the U. S. Department of Labor pays the salary of the clerk for that office. Since the chief of this division also attends to the

land settlement and publicity work, using the same clerk, the advantages of this arrangement can be readily understood.

The agricultural statistician of the U. S. Department of Agriculture, and his complete staff of workers, all paid by the U. S. Department of Agriculture, are a part of the Montana Department of Agriculture under cooperative agreement, and their presence and help is of great value to the state. They handle the tabulation and compilation of farm census reports for this state, which otherwise would have to be done at state cost in the Department of Agriculture. The net result of this cooperative agreement is increased efficiency for the Department of Agriculture at no increased cost.

PART III. - RECOMMENDATIONS

In addition to the several changes mostly of minor character recommended by the men who have carried for four years the responsibility of administering the laws of the state relating to their several divisions in this department, the one important recommendation which the present Commissioner of Agriculture wishes to make and stress is this: that there should be a careful study made of the duties that are lodged with this department by law so that an accurate co-relation may exist between the work to be done and the amount of money appropriated by the Legislature with which to do it.

If additional duties are lodged with the Department of Agriculture they should carry a corresponding appropriation. On the other hand, if it should be decided to reduce the amount of money appropriated for

the Department of Agriculture, the reduction should be accomplished by doing away with specific branches of work, so that the saving sought for can be made. The budget 66 the Department of Agriculture for the current bionnium appropriates $38,259 for each year out of the general fund. New and important work is opening up in connection with the state land settlement program which has led to the request for an increase in the budget to $43,870 a year appropriated out of the state general fund. It will not be possible to do what should be done along this line with the amount of money appropriated at the present time unless some other responsibilities and duties are removed. Neither will it be possible to carry on properly the present duties lodged in the Department of Agriculture by law with an appropriation smaller than that of the last two years.

Grain Standards and Marketing

The chief of the Grain Division recommends that Section 3589 of the present law should be amended to give the department the same supervision over track buyers, grain dealers, commission men, brokers and agents as is given in the case of public warehousemen failing to meet their storage obligations or other obligations due their patrons for grain. An opinion has been rendered by the Attorney General to the effect that the department only has supervision over warehoussmen as provided by Section 3589 (a).

Considerable trouble has arisen where scale tickets have been issued on receipt of grain, and the patrons have failed to have storage tickets issued in lieu thereof and have held the scale tickets as the only evidence for grain delivered. Bonding companies have refused to

recognize these scale tickets in cases of insolvency. This has resulted in litigation. It is thought best by the department to eliminate, if possible, the issuing of scale tickets, or to make provision in the law to require warehousemen to issue either cash tickets or regulation warehouse receipts for grain received each day.

Experience in administering the wheat grades fixed by the U. S. Department of Agriculture has led this department to make a recommendation that requirements in the new spring wheat sub-class "hard spring" be changed so that the minimum test weight for No. 1 grade shall be reduced from sixty pounds to fifty-eight pounds per bushel, and the percentage of dark hard and vitreous kernels shall be increased from 85 per cent to at least 90 per cent.

Since Montana is a hard spring wheat state and most of our market movement in wheat is toward Minneapolis, this Department is recommending to the U. S. Department of Agriculture that Montana be included in the Minneapolis instead of in the Spokane Federal Grain Supervision District.

There is confusion and duplication of authority in the state work in scale testing. The Legislature has made special appropriation for correction of the scales that weigh grain through the Department of Agriculture. This necessitates covering the entire state, and men who are scale experts are employed for that purpose. If Montana is to follow the experience and practice in other states it is probably advisable that one division should be given jurisdiction over the weighing machines in the state for protection to the public. The scale expert of the Department of Agriculture advises that, with the scale men in the field

doing work which at present comes under the scale testing law, a wider field could be covered at practically the same expense. After studying the operation of this law he recommends that the weights and measures law of the State of Montana be amended to conform as closely as possible to that of Minnesota, except that the Montana work should operate on a fee system so as to be self-supporting instead of by legislative appropriation.

Division of Horticulture

The chief of the Division of Horticulture reports that some changes should be made in the wording of the law relating to grading fruit and vegetables for shipment outside the state, and to condemnation of shipments of fruit mis-branded as to grade. The present law relating to the inspection of nursery stock should be revised. It was enacted many years ago, since which time the nature of the nursery stock business has materially changed.

Lumber interests in Montana are recommending legislation to authorize the eradication of the cultivated English black currant, the host of the white pine blister rust which is threatening the big white pine forests in Montana. A simple law such as that providing for the eradication of the berberry is suggested.

Special legislation seems to be necessary in order to enable cities to handle the problem of insect pest and disease control on city plantings. The spraying of city back yards is not a function of the state, but might well be made one of city administration. If provision can be made for the establishment by cities of spraying districts with authority for the city to spread the cost as a tax against the property sprayed, the Department of Agriculture could furnish the necessary supervision at

no additional cost. On this line it has been found that much damage is done each year by incompetent or careless custom sprayers. Individuals doing this work might well be licensed and bonded to insure that it is done in such a way as to accomplish its purpose.

Fresh vegetables coming into the state frequently bear injurious insect pests and diseases. Existing laws give no authority for the condemnation of such diseased shipments. To illustrate the importance of this it may be mentioned that Montana is developing its corn acreage tremendously and many shipments of sweet corn are coming into the state infected with the corn ear worm. Yet the state has made no provision to prevent it.

Division of Dairying

The chief of the Dairy Division recommends that efforts be made to secure joint action by the states of Washington, Idaho, North Dakota, South Dakota and Minnesota with Montana to make the grading of cream compulsory and under the supervision of graders appointed by the state and at the expense of the industry served. This follows the practice in Canada and has for its object to get prices for dairy products based on quality.

A law making the pasteurization of cream and milk used in the manufacture of ice cream or butter compulsory is recommended.

The use of oleomargine should be prohibited in all state institutions.

Labor and Publicity

In the past several recommendations have been made to make the work of the Division of Labor more effective, but there has been no interest evinced by the Legislature, and the conclusion has been reached that until labor forces unite in recommending and working for the enactment of new

laws relating to their own business, there is small prospect of legislative attention to the subject.

For the land settlement and publicity activities of this division it is strongly urged that such legislation as may be necessary to concentrate the state work relating to land settlement in the Department of Agriculture be passed; also the law providing for the licensing and bonding of real estate dealers might be amended to lodge this work with the land settlement division of the Department of Agriculture. Adequate financial support for this important branch of work is recommended.

Apiculture

Honey production has grown to considerable importance in Montana and the beekeepers are very anxious to free Montana from all contagious bee diseases and to keep it free by rigid querantine enforcement. The Montana Beekeepers Association recommends legislation that will make available money to carry on a real program of disease control and extension work in this state. They represent that a minimum of $3,000 is required for that purpose. This does not appear in the budget for the Department of Agriculture. The bee industry is willing to pay the expense if a system can be devised to place a license tax or a colony tax on bees to raise this money.

PART IV. - THE AGRICULTURAL SITUATION - 1924

Montana farmers and stockmen produced in 1923 the largest volume of crops and livestock grown in any one year of the state's history up to 1924.

In 1924 the production of many important crops exceeds that of 1923, and the gross and net value of the aggregate to the farmers is considerably higher than last year.

Crops of 1921, 1922, 1923 and 1924 have been good and have been as profitable, considering the state as a whole, as similar crops were in those years in any wheat, hog or cattle-growing state. These years witnessed a steady growth in Montana's production, and a widening in the diversity of its income.

It is impossible to understand Montana's position without recalling the agricultural history from 1917 to 1920.

A series of years with sub-normal precipitation was ushered in with 1917 that is without parallel in the recorded weather history of this region. It culminated in 1919. These were years of abnormally high costs of operation, when returns, also, would have been high, had it not been for the crop shortages. As it was, the high costs were solidified in debt. Each year witnessed new sources of credit drained without hoped-for returns.

In 1919, feed crops as well as grain were short. The winter that followed was long and severe. Feeding started in October and kept up for six months. Montana sent out over $50,000,000 mostly borrowed for hay and feed to keep life in the large and well-graded livestock population that had been built up.

Then came the defletion of the summer of 1920. It smashed livestock valuee so that in many cases the sales price of the stock wes lees than had been borrowed to cerry it through the winter. This edded the oap sheaf to the load of debt.

The history of egriculture eince 1920 has been one of efficient and abundent production, but of difficulty bceeuse of this handicep of debt. It has been readjusted in part. Much of it has been reduced through peyment. Some of it hee been liquidated through bankruptcy end foreclosure.

A eignificant feeture which shows the trend to be definitely upweord ie the fact that this yeer'e crop - 1924 - wee put in end carried through to the harvest with prectioelly no credit, therefore, no additional debt. The liquidation of this fall and winter will mark e definite end long etride towarde rscevery.

Over One Million Cash Crop. In come of Montane farmers end etookmen from marketing the 1924 crop will be in sxoese of 100 million dollars. Tabulation of estimeted production end probable eeles at ruling pricee reeches e total of $117,158,000 of which $69,808,000 ie from sele of farm crops, end $47,350,000 ie from eele of livestock end miscelleneous producte.

The figures of the department of agriculture on 1924 crop end livestock sales income, based on eetimatee of the Montane Cooperetive Crop Reporting Service, J. G. Diamond, Agricultureel Statietician, ere:

Income from Sale of Farm Products:

Wheat at	$1.24	$52,536,000
Corn at	.99	911,000
Oats at	.47	1,866,000
Barley at	.69	321,000
Rye at	.91	159,000
Flax at	2.21	4,672,000
Potatoes at	.87	1,133,000
Hay at	10.00	1,710,000
Other crops (fruit included)		6,500,000
		69,808,000

Income from Sale of Livestock:

Beef	13,200,000	15,000,000
Sheep and lambs		8,000,000
Wool		7,200,000
Milk and dairy products		8,000,000
Hogs		5,000,000
Poultry and eggs		3,600,000
Honey		250,000
Horses		400,000
		47,350,000

Total $117,158,000.

In connection with these estimates, the Department of Agriculture calls attention to the fact that of the crops listed, varying percentages are actually sold by the farmer, the balance being fed on the farm or used for seed. The following percentages were considered in computing income:

Wheat	82% sold
Corn	10% sold
Oats	20% sold
Barley	15% sold
Rye	10% sold
Flax	90% sold
Potatoes	40% sold
Hay	6% sold

Montana's National Position. The men and women now actually operating farms in Montana have advanced this state into a position of national significance in agriculture. Much of this growth has taken place

within the last decade. The same rate of progress will work this state out of its agricultural difficulties considerably sooner than the same can be accomplished in many of the older farm states where the investment in land and equipment is heavier.

This can be done without any more than a normal addition of new farmers. Men and women who are fitted to make good by experience and capital are desired in Montana, of course, but the state now has within its borders the farmers who have achieved truly remarkable results during the last five years.

Montana ranks third in area among all the states.

Its rank in total area of land in farms is fifth.

Of the spring wheat states, Montana ranked second in volume of crop.

In production of hay, Montana stands in the upper ten among the states.

In value of livestock production, Montana ranks seventeenth.

In 1910, Montana ranked 23rd among the states in volume of wheat production; in 1923, Montana had advanced to fifth place, and was within ten million bushels of second place. This year's wheat production will probably advance the state to fourth place.

In 1910, only three states of the Union ranked below Montana in production of corn. In 1923, seventeen states had been dropped behind. The development of corn over three-fourths of the state's area has been phenomenal. Witness the following tables:

Year	Acreage	Est. Yield
1900	1,800 acres	23,970 bushels
1910	16,000 "	368,000 "
1920	184,000 "	2,226,000 "
1923	365,000 "	9,490,000 "
1924	555,000 "	10,732,000 "

Of the 11 far western states, Montana in 1923 stood second only to California in area cropped in farms, and in value of livestock production.

This state is third in wool production. Rank in flax production is fourth.

Significance of Wheat. Because about 95 per cent of Montana's wheat is grown on non-irrigated land, wheat is and will continue to be the state's major cash crop for a long time to come. One year with another, Montana's spring wheat has a higher protein content and therefore a higher milling value than the wheat grown in any other state.

Seventy per cent of the cash income of Montana farmers from crops is from wheat. Fifty-two per cent of our planted acreage is in wheat.

Some idea of the comparative value of Montana spring wheat may be gained from a milling study conducted in the late winter of 1923 by the U. S. Department of Agriculture, covered more fully elsewhere in this report in connection with the work of the Grain Division.

It should be born in mind that the tendency in agriculture is toward development of those crops that bring best returns to the farmer. It is significant to note that while the average acreage planted to wheat per farmer growing wheat in 1909 was 32 acres, the average had steadily mounted until in 1923 it stood at 103 acres per man growing wheat.

Trend Toward Diversification. Montana's increasing wheat production does not mean that there has been stagnation in development of other forms

of production that generally are referred to as diversified farming.

The increase in butter fat production in 1923 over 1922 amounted to over 50 per cent. The records of the state department of agriculture show:

7,750,000 pounds of butter produced from 57 creameries in 1922.
10,750,000 pounds of butter produced from 66 creameries in 1923.

The increase in 1924 over 1923 will probably approximate 50 per cent.

The number of specialized dairy cattle in Montana has increased 250 per cent since 1910. The jump in 1923 was to 200,000 from 165,000 in 1922.

The number of swine has partially kept pace with the expanding corn acreage since 1910. The increase in 1923 over 1910 was 350 per cent.

In the spring of 1924 the percentage increase in the number of sows farrowing in Montana was higher than in any other state of the Union. This was also true of the reported intentions of farmers for fall litters, according to the reports of the U. S. Department of Agriculture.

Although the Montana Great Northern beans have been grown but for a few years, and chiefly in the Yellowstone Valley, the industry has spread until the state ranks seventh among all states in the size of the bean crop. There will be marketed this year between 250 and 300 carloads of Great Northern beans. The crop is excellent.

The sugar beet acreage advanced from 23,000 acres in 1923 to 33,000 acres in 1924, with good prices and excellent yields promised.

Careful and Efficient. The writer does notehere the frequently expressed opinion that the farm difficulties in Montana have been due to lack of efficient farmers. Much of the trouble has come from natural or

from national and world-wide causes, such as the disastrous smash in farm prices in 1920 while operating costs remained high. In spite of the trials and hardships of the years referred to, the fact that these same farmers in 1923 and 1924 produced Montana's greatest crops, is proof conclusive that this state and the men in it can produce and produce abundantly.

Our chief competitive advantage lies in our relatively low-priced lands, and in competition with other states that did not escape inflation as Montana largely did, this factor will assist Montana's restoration at a rate relatively more rapid than in many older agricultural states.

CHESTER C. DAVIS,

Commissioner of Agriculture.

FINANCIAL STATEMENT

DEPARTMENT OF AGRICULTURE

July 1st, 1922 to June 30th, 1923.

	Expenditures	Earnings	Net-Earnings	Net Cost
A - Commissioner's Office	9,921.47			9,921.47
B - Dairy Division	8,866.96	523.00		8,343.96
C - Grain Division	21,891.58	20,515.23		1,376.35
D - Horticulture Division	26,441.29	11,200.46		15,240.83
E - Labor & Publicity	6,583.19			6,583.19
F - Poultry Shows	1,904.11			1,904.11
G - Apiculture	95.37			95.37
TOTALS	$75,703.97	$32,238.69		$43,465.28

July 1st, 1923 to June 30th, 1924.

	Expenditures	Earnings	Net-Earnings	Net Cost
A - Commissioner's Office	9,802.99			9,802.99
B - Dairy Division	8,192.80	2,504.00		5,688.90
C - Grain Division	24,287.36	25,910.18	1,622.92	
D - Horticulture Division	20,804.87	6,602.35		14,202.52
E - Labor & Publicity	7,500.90			7,500.90
F - Poultry Shows	1,632.72			1,632.72
G - Apiculture	226.92			226.92
TOTALS	$72,448.66	$35,016.53	$1,622.92	$39,054.95

July 1st, 1924 to December 31st, 1924.

	Expenditures	Earnings	Net-Earnings	Net Cost
A - Commissioner's Office	4,901.92			4,901.92
B - Dairy Division	4,285.48	553.00		3,732.48
C - Grain Division	15,730.45	20,827.66	5,097.41	
D - Horticulture Division	9,731.39	2,169.99		7,561.40
E - Labor & Publicity	3,431.96			3,431.96
F - Poultry Shows	317.59			317.59
G - Apiculture	79.72			79.72
TOTALS	$38,478.51	$23,550.85	$5,097.41	$20,025.07